

**RICHARDS
LABORATORIES****OPA**INC
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December 30, 1994

TO: Hayes Griswold

FROM: Dean Richards

RE: Fate of Bacteria in POTW

For the most part, any of the organisms found in the system to be used at the Vernal, Utah Bioremediation Site will be welcome at the POTW. All of the organisms used in Richards' system are derived from the same type of organisms found in the POTW.

Richards' organisms have been changed naturally by long and continuous exposure to petroleum hydrocarbons. These organisms have become highly efficient in the metabolism of BETX as well as other hydrocarbon compounds. All of these organisms require sources of carbon found in hydrocarbon; nitrogen from added nitrate and phosphorous from added phosphate.

When the hydrocarbon or carbon source is depleted, the organism can no longer live, likewise, when the supply of nutrient which we supply is shut off, the organisms become starved and die. There may be a few of the organisms that can make a living eating some of the hydrocarbon at the POTW. When this is the case, the plant is enhanced by their addition.

The BOD of water from most treatment sites rarely becomes higher than 3.0 mg/L. Nitrate and phosphate are monitored and added in such amounts as to be used up before the effluent is released.

Dean Richards

FILE PLAIN

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